

REMARKS

Applicant thanks the Office for the attention accorded the present Application in the November 30, 2006, Office Action. Claims 1-20 are pending in this application. Reconsideration in view of the following remarks is respectfully requested.

Applicant does not acquiesce in the correctness of the rejections and reserve the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicant reserves the right to pursue the full scope of the subject matter of the claims in a subsequent patent application that claims priority to the instant application.

Claim Rejections

Claims 1-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kulhalli et al. (USP No. 6,822,679).

Drawings

It is noted that the Examiner has accepted the drawings as originally filed with this application.

Claim Amendments

35 U.S.C. §102(b) rejections of Independent Claims 1, 8 and 15

The Office rejects independent claims 1, 8 and 15 under 35 U.S.C. § 102(e) as being anticipated by Kulhalli. Applicant clarifies the claimed invention by amending claims 1, 8 and 15 and traverses the rejections because Applicant submits that Kulhalli fails to teach or suggest each of the claim limitations.

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed subject matter must be represented in the applied reference to constitute a proper rejection under 35 U.S.C.

§102(e). In the present case, not every feature of the claimed subject matter is disclosed in Kulhalli.

Specifically, Kulhalli does not disclose correcting "a *gain* of the following digital output signals generated by the analog front end" by "the *gain error*" (claims 1, 8 and 15 of the present application) (emphasis added). In order to "fully use the dynamic range of the analog-to-digital converter to have a better SNR [Signal-to-Noise Ratio]" (page 3, lines 4-5), the present invention generally provides a correction system and method to deal with two kinds of errors of the digital output signal of an analog front end: the *offset* error and the *gain* error. In this regard, please refer to FIG. 6 of the present Application and the accompanying description:

Generally, the *gain error* and the *offset* [error] exist in the analog-to-digital converter 26. The offset represents the level error of the analog sampling signal of the black pixel signal. FIG. 6 is a schematic diagram of the ideal converting curve and the converting curve with error. As shown in FIG. 6, Line 1 means an ideal converting curve. Line 2 means a converting curve with *gain error*. Line 3 means a converting curve with *gain error* and *offset* [error]. In fact, the converting curve of the conventional analog front end is close to Line 3 but the offset is not always positive. In order to correct Line 3, the offset and the slope of Line 3 must be obtained in advance. In other words, except the previous level error, two points on Line 3 must be obtained in order to estimate the slope.

(Page 7, lines 13-22 of the present Application)

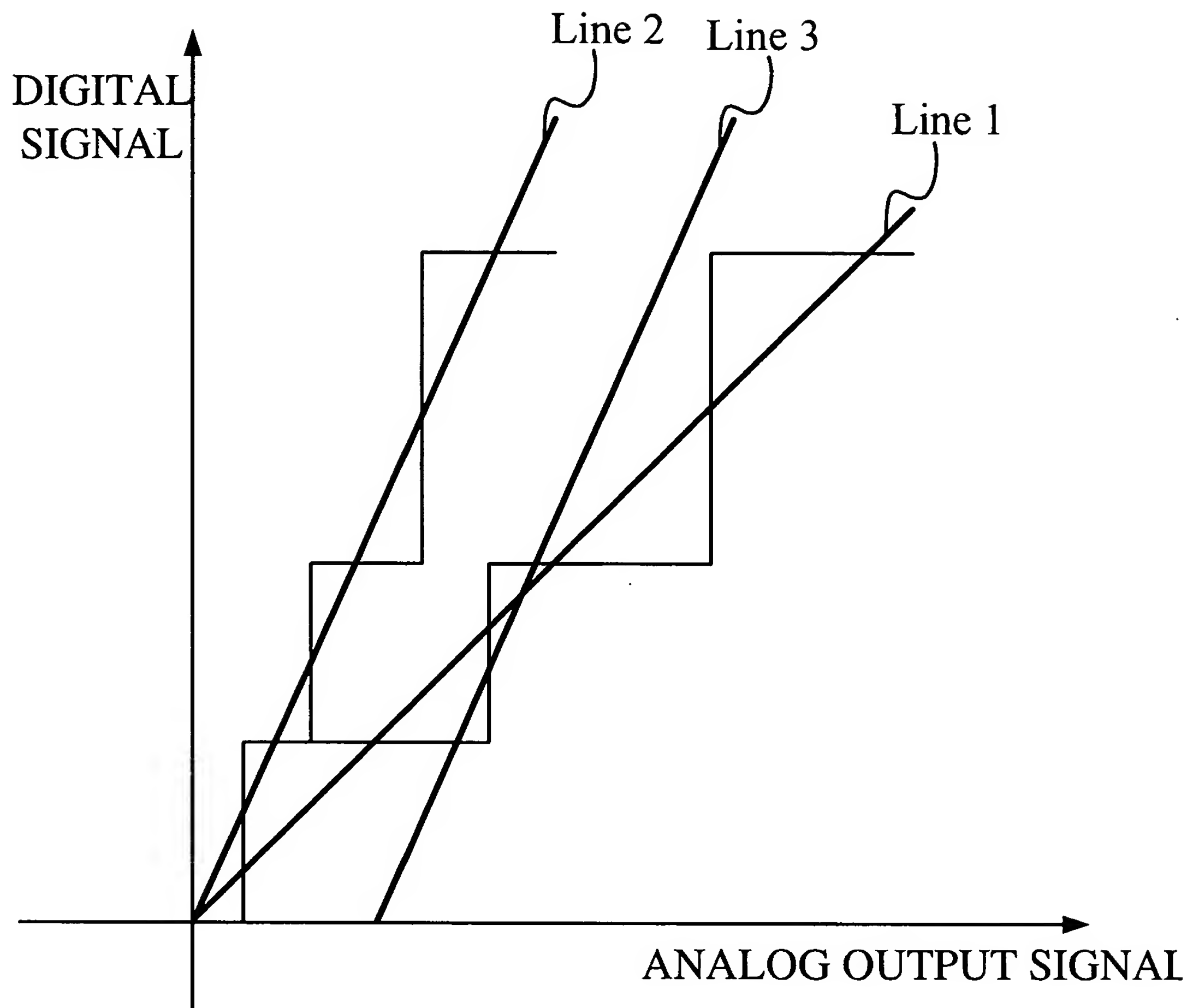


FIG. 6

In this regard, claims 1, 8 and 15 specifically claim how to generate a "first digital correction signal" and a "gain error" for the purposes of correcting the offset and the gain respectively. The "first digital correction signal" is generated to correct the *offset error* of the analog signals to be inputted into the analog front end. The "gain error" is generated to correct the *gain* of the digital output signals generated by the analog front end. Furthermore, claims 1, 8 and 15 claim a specific way as to how to obtain the "gain error": to use the "first digital signal" to generate "a real converting curve" and to compare the real converting curve with "an ideal converting curve" to obtain the "gain error."

Kulhalli teaches none of these. That is, Kulhalli fails to disclose correcting the *gain error* of the output signals from the analog front end. It follows that Kulhalli also fails to disclose *how* to obtain the gain error, as well. As compared with claims 1, 8 and 15 of the present application, Kulhalli deals with only one kind of error correction: ***offset correction***. This is evident from Kulhalli's 1) TITLE: "*Offset correction to the output of a charge coupled device*;" 2) ABSTRACT: "The *offset* is iteratively adjusted by an amount proportionate to an error determined based on the black pixels;" 3) BACKGROUND OF THE INVENTION: "A correction (termed "*offset correction*") is often applied to the output . . . to compensate for (or eliminate) undesirable components which may be present in the CCD output;" 4) SUMMARY OF THE INVENTION: "According to another aspect of the present invention, the *offset* may be computed by generating a weighted average of the voltages of black pixels in several lines;" 5) DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS: "Comparator 380 subtracts the value in the black level register 375 from the average value generated by averager 370 to generate the *offset*. The parts of averager 370, comparator 380 and correction computation block 390 which together generate the *offset* form an example implementation of an *offset generation circuit*" (col. 7, lines 21-26). Though the Office cites Kulhalli's disclosure in col. 7, lines 18-26 and col. 7, lines 27-50, nowhere in these paragraphs is the correction of gain error disclosed.

In sum, Kulhalli's disclosure clearly demonstrates that it is only concerned with the correction of offset error, not the correction of gain error. As a result, the reference cannot be said to obtain and correct the gain error, as compared to the specific recitation in claims 1, 8 and 15. It is therefore believed that the independent claims 1, 8 and 15 of the present application are substantially different from Kulhalli's disclosure. Accordingly, Applicant submits that Kulhalli does not anticipate claims 1, 8 and/or 15, as amended, and respectfully requests withdrawal of the rejection.

35 U.S.C. §102(e) rejections of the other claims

Applicant submits that the dependent claims 2-7, 9-14 and 16-20 not specifically addressed herein are allowable for the reasons discussed in pertinent

portions associated with their independent claims respectively, as well as for their own additional features. Accordingly, Applicant asserts that the cited prior arts neither anticipate nor renders obvious claims 2-7, 9-14 and 16-20 and respectfully requests withdrawal of the rejections.

Reconsideration of claims 1-20 is respectfully requested.

It is further submitted that *Kulhalli* do not disclose, or suggest any modification of the specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Thus, it is not believed that *Kulhalli* render obvious any of Applicant's amended claims under 35 U.S.C. § 103.


Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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